

APPENDIX A SITE GEOLOGY AND SOIL BORING LOGS

PARCEL D
SITE INVESTIGATION AND EXCAVATION
BOEING REALTY CORPORATION
C-6 FACILITY
SEPTEMBER 1999



APPENDIX A SITE GEOLOGY AND SOIL BORING LOGS

SITE GEOLOGY

Soil conditions consisted generally of very dark brown, moist, silty clay from the surface to a depth of 4 to 8 feet bgs. The clay is underlain generally by slightly moist, hard, dark yellowish brown clayey silt. The clayey silt generally becomes lighter in color with depth, and grades in and out from clayey silt to sandy silt. Calcareous nodules were commonly observed, most often between 14 and 16 feet bgs. Clayey or sandy silt continues to the terminal depth in most of the soil borings, but is underlain by silty sand at 16 to 18 feet bgs in the westernmost borings B1 and B5. The silty sand is light olive brown, fine, and slightly moist, and continued to 25 feet bgs in both borings.

No soil discoloration, odors, or high photoionization detector readings were observed during the drilling and sampling at Parcel D. Groundwater was not encountered in any of the soil borings.

BOL	LOCATION							Keni	1eay/J	enks Consultants		
	Parce	l D						Boring Name —	B-1			
DRILLIN	NG COMP.	ANY Chris	tenson			DRILLER Ruben		Project Name		g C-6		
DRILLIN	NG METH	OD (S)		· · · · · · · · · · · · · · · · · · ·		DRILL BIT (S) SIZ	E		99400			
DEPTH T	TO WATE					1.75"		Project Number		TOTAL DEPTH		
LOGGEI		ncount	ered			·		Not Surveye	ed	DATE COMPLETED		
	J. Kni	ght	1	1 - 1		·	<u> </u>	6-16-99		6-16-99		
Driven Recovered	Coffected Blows per 6:	Head Space Reading (ppm)	Depth (feet)	Graphic Log	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS					
	L CL						Silty CLAY: very dark	brown, moist, firm				
continuous co	5					10YR 5/4						
	8		5- 10YR 5/4 yellowish brown, slightly moist, hard							_		
							Clayey SILT with fine	sand: yellowish brown, s	lightly mois	st, hard		
	8		10- - -			2.5Y 4/4	-	with Clay, olive brown, s				
-			- 15- - -				-		, moist, very	y stiff, some calcareous nodules		
-			-				grades to Sandy SILT v	vith Clay		-		
-			20-	I T. T. T. T. T. T. I.	SM	2.5Y 5/6	Silty SAND: light olive	e brown, fine, slightly mo	oist, mediun	n dense -		
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		G COMP	Christ	tenson		1	DRILLER Ruben		•	Boeing C-6	
1_			t Push				DRILL BIT (S) SIZ 1.75"	E		994009.00	
		O WATE Not E		ered					Project Number ELEVATION Not Surveyed	TOTAL DEP	TH 26 feet
LOC	GED	BY J. Kn					* * * * * * * * * * * * * * * * * * * *	DATE STARTED DATE			LETED
	Ē .	AMPLES	3	Depth (feet)	Graphic Log	uscs	Munsell		6-16-99		6-16-99
Driven	Recove	Bloss Bloss Per 6:	Head Spi Reading (ppm)	(feet)	Graphic Log	USCS Log	Munsell Color	!	L DESCRIPTION AND DE	RILLING REMARK	i.S
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continuous core	r	٩									-
inuo				-				 -			
Con	L			-			 				
	XX	8		5-		ML	10YR 3/4	Clayey SILT: dark yell	owish brown, slightly mois	t, hard	-
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	XX	*		10-				some fine sand, decrea	sing clay		-
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	-	<u>°</u>	1	125	-		CL	10YR 2/1	Silty CLAY: black, mo	pist, firm		
	continuous core	⊠ 5-									- - -	
ŀ				•	-			10YR 3/3	dark brown, slightly m	oist, hard	-	
I							ML	10YR 3/4	Clayey SILT: dark yell	owish brown, slightly moist, har	ď	
ŀ	10-								Calcareous nodules			
		**		2.5Y 4/4 grades to Sandy SILT, olive brown, with Clay							- - -	
					- - - 20- -			2.5Y 5/4	-	light olive brown, slightly moist	t, hard - - - - - -	
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DRI	LLIN	G COM	PANY e Christ	tenson		1	DRILLER Ruben					
DRII	LIN	IG METI	IOD (S)	CHSUN			DRILL BIT (S) SIZ	E	Project Name	-		
DEP	TH 1	Direc O WATE	t Push R				1.75"	1.75" Project Number 994009.00 ELEVATION TOTAL DEPTH				
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ırken	ecovered	AMPLES Blows Blows Collection	Head Space Reading (ppm)	Depth (feet)	Graphic Log	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS				
		į.	183			CL	10YR 2/2	Silty CLAY: moist, fir	m, very dark brown			
continuous core	XXX			5-			10YR 5/4	yellowish brown, sligh				 -
-	888	XXX		10-		ML	2.5Y 5/4	_	re brown, slightly moist,	hard		-
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				20-			2.5Y 5/4	grades to Clayey SILT,	with a trace of fine sand	l, slightly moist	, hard	
	**	Š.		25-				calcareous nodules				-
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		LOCAT	Log						Kenn	leuy/Je	nks Consultants
		Parce	l D						Boring Name —	B-5	
DRIL	LIN	G COM	ANY e Chris	tenson			DRILLER Ruben			Boeing	r C-6
DRIL	LIN	G METH	OD (S)				DRILL BIT (S) SIZ	Ε	Project Name	994009	
DEP1	гн т	O WATE	R				1.75"		Project Number ELEVATION		TOTAL DEPTH
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	S	J. Kn	ight								6-16-99
Driven	Gerovered	Blows per 6:	Head Space Reading (ppm)	Depuh (feet)	Graphic Log	USCS Log	Munsell Color	SOI	L DESCRIPTION AND I	DRILLING	REMARKS
continuous core lonwan	Delayoner SSS	ES 13 and September 19	Egg (mad)	Depuh (feet) 5- 10- 20- 30-		USCS Log CL	Munsell Color 10YR 3/3 10YR 4/4 2.5Y 4/4 2.5Y 5/6	Silty CLAY: dark brown Clayey SILT: dark yell grades to fine Sandy Si decreasing sand grades to Clayey SILT: some calcareous nodule fine sand, decreasing cl	L DESCRIPTION AND I	oist, hard	
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		Parce	l D			~			Boring Name —	B-6		
		COMP Layn	e Christ	tenson		1	DRILLER Ruben		Project Name	Boein	g C-6	-
DRII		G METH	OD (S) t Push			1	DRILL BIT (S) SIZI 1.75"		Project Number	99400		
DEP	TH T) WATE		ered			***************************************		ELEVATION Not Surveye	orl	TOTAL DEPTH	26 feet
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ore		1	145			CL	10YR 2/2	Silty CLAY: very dark	gray brown, moist, firm	1		
continuous core	2	٩						_				•
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3	5 -				10YR 3/4	dark yellowish brown,	slightly moist, hard			-		
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DRIL	ΤIJ	NG	COMP.	ANY		1	I	ORILLER				
DRII	I.IN	I VG	AYNE	Christ OD (S)	enson	 	-	Ruben	Project Name Boeing C-6			
		I)irect	Push				ORILL BIT (S) SIZE 1.75"	Project Number 994009.00			
DEP	TH T	то 1	WATE	R ncounte	ered				ELEVATION TOTAL DEPTH Not Surveyed 16 feet			
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Driven	8	fected	Blows per 6:	Head Space Reading (ppm)	Depth (feet)	Graphic Log	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS			
اة	- 1	- 1	88	1. S		dillillillilli			Asphalt, 3"			
continuous core	XXX	器			_		CL	10YR 2/2	Asphalt, 3" Silty CLAY: very dark brown, moist, firm			
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DRII	LIN	METH	OD (S) t Push			1	DRILL BIT (S) SIZ	Е	00.40	09.00
DEP	тн то	WATE	R				1.75"		ELEVATION	TOTAL DEPTH
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continuous core	***	1		1		CL	10YR 3/3	Concrete, 3" Silty CLAY: dark brow	wn, moist, stiff	
•	**			5-		M	10YR 3/6	dark yellowish brown,		_
-	×			10-		ML	10YR 5/6	some fine sand, very st		
				-			10YR 5/4 2.5Y 4/4	grades to Sandy SILT: olive brown	yellowish brown, fine sand, slightl	y moist, very stiff, some clay
				15-				some calcareous nodul	es, decreasing sand	-
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7. CONCLUSIONS

The site investigation of Parcel D was conducted in accordance with the approved Sampling and Analysis Plan (IESI 1999e). The data generated during this investigation will support future site remediation, feasibility studies, groundwater investigations, and risk assessment, should such actions become necessary.

Initially, soil samples were collected from 10 borings. An elevated concentration of total arsenic was detected in one of these samples at a concentration of 18 mg/kg. Other analyses did not indicate other contaminant concentrations above the HBRGs established for the site. Delineation samples were collected to determine the extent of the arsenic contamination, which measured approximately 400 by 200 feet in area, from the surface to approximately 1.5 feet bgs, with four areas to approximately 2.5 feet bgs.

Arsenic-impacted soil was excavated from an area measuring approximately 400 by 300 feet, to depths between 1.5 and 2.5 feet. Confirmation samples were collected following the excavation to ensure that all contaminated soil had been removed. Additional soil was excavated when the samples indicted total arsenic concentrations greater than 14 mg/kg. According to the final round of confirmation sampling, total arsenic concentrations are below 14 mg/kg. No further excavation of arsenic-impacted soil is deemed necessary as a result of this effort. A Parcel D post-demolition risk assessment is being prepared to confirm that the site poses no risk to human health or the environment.

Approximately 8,200 cubic yards of non-hazardous soil were transported to the Bradley Landfill for use as daily cover. Forty-two cubic yards of soil were transported to the Kettleman Landfill for disposal as non-RCRA hazardous waste. The disposal activities are documented in the Parcel D Waste Discharge Requirement Monitoring and Reporting document (IESI 1999f).



8. REFERENCES

Bayley Construction (Bayley) 1998. Bayley Construction Site-Specific Safety Plan, Boeing Facility, Los Angeles, California.

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Regional Water Quality Control Board (RWQCB), Los Angeles 1999a. Letter from Dennis Dickerson of RWQCB, Executive Office to Mario Stavale of Boeing Realty Corporation authorizing the Waste Discharge Requirements for Discharge of Contaminated Soil (File No. 88-57-003 (99)). July 29.

Regional Water Quality Control Board (RWQCB), Los Angeles 1999b. Letter from Augustine Anijiello of RWQCB to Mario Stavale of Boeing Realty Corporation approving the Parcel D Sampling and Analysis Plan for the C-6 Facility (File No. 100.315) (SLIC No. 410). May 27.